

ROSS ENVIRONMENTAL ASSOCIATES, INC.

Hydrogeology, Water Quality, GIS Planning,
Contaminant Fate & Transport, Remediation,
& Regulatory Compliance and Permitting



Initial Site Investigation Report

**Former Rice Residence
117 Richardson Road
Barre, Vermont 05641**

**SMS Site #: 2006-3531
Site Coordinates: 44° 13' 1.59" N, 72° 31' 18.97" W**

14 August 2006

Prepared For:

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***R.E.A. Project No. 26-047
R.E.A. Document #: 26047ISI***

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EXECUTIVE SUMMARY

Ross Environmental Associates, Inc. (**R.E.A.**) has conducted an initial site investigation (ISI) at the former Rice Residence, located at 117 Richardson Road in Barre, Vermont. Field investigation included: installation of five soil boring/monitoring wells, field screening of subsurface soil samples for the possible presence of volatile organic compounds (VOCs), sampling and analysis of water from four on-site monitoring wells, and a receptor survey to identify potential risks to the environment and human health.

Available information indicates that residual petroleum contamination identified during the UST closure is limited to the soil and groundwater in the immediate vicinity of the former UST system, and that no sensitive receptors have been threatened or impacted at this time. No petroleum contamination was detected in any of the groundwater samples collected from the on-site monitoring wells. Based on available information, active remediation is not likely to be required by the VT DEC; however, additional groundwater sampling may be required to confirm the initial findings.

On the basis of the results of this investigation, **R.E.A.** makes the following recommendations.

1. The site monitoring wells (MW-1, MW-2, MW-3, MW-4 and MW-5) should be re-sampled to confirm the findings of the initial sampling event. All samples should be analyzed for the possible presence of volatile petroleum compounds in accordance with U.S. EPA Method 8021B.
2. As a precautionary measure, the indoor air in the lower level of the former Rice residence should be screened with a PID for the possible presence of VOCs.
3. A summary report should be submitted following the completion of the additional work, which should include recommendations for possible long-term monitoring or site closure.

SITE PROFILE

Site Information

Site Name: Former Rice Residence
SMS Site #: 2006-2531
Site Address: 117 Richardson Road, Barre, VT.
Mailing Address: PO Box 1382, Montpelier, VT 05601.
Telephone: (802) 828-5993
Contact/Owner: Ms. Nancy Rice
Coordinates: latitude 44° 13' 01.59" N, and longitude 72° 31' 18.97" W.
Contaminants of Concern: Petroleum, characteristic of fuel oil.
Source: Former UST.

Aquifer Characteristics

Soil Type: The soils at the site consisted primarily of medium to coarse sand and silt with some cobbles and weathered bedrock.
Effective Porosity: 0.4
Hydraulic conductivity: 0.5 to 57 ft/day
Ground-water flow direction: southwest
Horizontal hydraulic gradient: 16 % (6/21/06)
Average ground water velocity: 0.2 to 23 ft/day
Ground-water depth bgs: 4 - 7.3 feet bgs
Saturated thickness: >unknown
Depth to Bedrock: 7 to 10.5 feet bgs

Receptors

Ground water: No volatile petroleum compounds were detected in the groundwater samples collected from four on-site monitoring wells.
Surface water: The nearest surface water body is an unnamed tributary of Stevens Brook, located approximately 150 feet west of the Site. No volatile petroleum compounds were detected in the ground water samples collected from the two downgradient monitoring wells situated between the former USTs and the unnamed tributary.
Buildings: During UST removal the lower level of the former Rice residence was screened with a PID for the possible presence of VOCs. Reading of 20.3 ppmv were noted consistently throughout the entire lower level, however, no petroleum odors were noted.
Underground utilities: A storm water collection and a sewer system are downgradient of the former UST along eastern side of Richardson Road.

1.0 INTRODUCTION

On 26 May 2006, Ms. Nancy Rice retained the services of **R.E.A.** to complete an initial site investigation (ISI) at the former Rice Residence in Barre, Vermont in accordance with Vermont Department of Environmental Conservation (VT DEC) guidelines. The ISI was completed to address the presence of soil and groundwater contamination discovered during the UST removal completed on 22 May 2006. This report has been prepared by **R.E.A.** under the direction of Ms. Nancy Rice; unauthorized use or reproduction of this report is prohibited, without written authorization from **R.E.A.**, or Ms. Nancy Rice.

1.1 Site Location and Setting

The property, which is currently owned by Mr. Carl Rapp, is occupied by a single family home with an attached carport. At the time of the UST closure, the property was owned by Ms. Nancy Rice. The property is located at 117 Richardson Road in Barre, Vermont (**Figure 1**, Appendix A). Drinking water for Site and surrounding properties is provided by the Barre City municipal system (WSID # 5254). Wastewater disposal for the former Rice residence is also provided by a municipal system.

The ground surface slopes moderately to the west-southwest, with an average elevation of approximately 740 feet above mean sea level (Maptech, 1998). The unnamed tributary of Stevens Brook is located approximately 150 feet west of the former UST system. The geographic coordinates of the site are: latitude 44° 13' 01.59" N, and longitude 72° 31' 18.97" W.

The surficial geology in the vicinity of the site is mapped as glacial till deposits (Stewart and MacClintock, 1970). Bedrock in the Barre area is mapped as the Waits River formation, which consists of gray quartzose and micaceous crystalline limestone of Lower Devonian age (Doll, 1961). A bedrock outcrop is located on the northeastern side of the house approximately 40 feet from the former UST. Bedrock refusal was also encountered during the installation of soil borings on site.

An orthophotograph from 1999 showing the site and surrounding properties (**Figure 2**) is included in Appendix A and photographs of the site and surrounding area taken during the initial site investigation are included in Appendix B.

1.2 Site History

According to Ms. Rice, the UST system was installed at the time of construction of the house back in approximately 1975 when many of the adjacent houses in the subdivision were also constructed. The tank was used to store fuel oil for the purpose of heating. Ms. Rice indicated that the tank had been out-of-service for about four years.

On 22 May 2006, **R.E.A.** provided oversight for the removal of a 500-gallon fuel oil underground storage tank (UST) located approximately ten feet east of the carport. The UST was found to be in very poor condition with significant rust and pitting. Several holes were observed on the bottom and sides of the tank and the UST was found to be entirely full of ground water.

Soils in the excavation consisted primarily of medium to coarse silt with some cobbles and weathered bedrock from ground surface to approximately 6.5 feet below ground surface (bgs). PID readings on soil samples collected from the UST excavation ranged from 13.5 to 501 ppmv, which are above the VT DEC action level of 10 ppmv for fuel oil/diesel contaminated soils. Light sheening was noted on groundwater, which was encountered at approximately 2.5 feet bgs. The vertical and horizontal extent of contamination was not defined during the UST closure. Based on the findings of the UST closure, the subsurface petroleum contamination is most likely due to several holes located in the bottom and sides of the former UST.

1.3 Land Use and Adjacent Property Ownership

The subject property is located in a suburban residential area of Barre, Vermont. The former Rice property is bordered on the north, south and east by private residences, and to the west by an undeveloped wooded area. Richardson Road forms the western boundary with an unnamed tributary to Stevens Brook situated on the western side of Richardson Road.

2.0 Field Investigation Results and Procedures

R.E.A.'s field investigation included: the installation of five soil boring/monitoring wells (MW-1, MW-2, MW-3, MW-4 and MW-5); field screening of subsurface soil samples for the possible presence of volatile organic compounds (VOCs) using a portable photo-ionization detector (PID); collection and analysis of water samples from four site monitoring wells, and a receptor survey to identify potential risks to the environment and human health. Approximate monitoring well/soil boring locations and significant site features are shown on **Figure 3** in Appendix A.

The objectives of this initial site investigation were to:

- Evaluate the degree and extent of petroleum contamination in soils and ground water;
- Qualitatively assess the risks to environmental and public health via relevant sensitive receptors and potential contaminant migration pathways.
- Identify the need for further site characterization, appropriate monitoring, and/or remedial actions based on the site conditions.

2.1 Contaminants of Concern

Based on available information, the contaminants of concern (COC) at the former Rice residence appear to be volatile petroleum compounds, related to No. 2 fuel oil.

2.2 Source Area Evaluation

Based on available information, the source of residual petroleum contamination discovered at the former Rice residence is the former UST system. The UST was found to be in very poor condition with significant rust and pitting. Several holes were observed on the bottom and sides of the tank and the UST was found to be entirely full of ground water. No up-gradient sources of petroleum contamination were identified during the ISI.

2.3 Soil Boring and Monitoring Well Installation

On 14 June 2006, **R.E.A.** provided oversight during the installation of five monitoring wells, three of which were installed in the presumed downgradient direction from the former UST system (MW-1, MW-2 and MW-3), one was installed adjacent to the former UST (MW-4) and one was installed up-gradient of the former UST (MW-5). The soils at the site consisted primarily of brown and dark brown fine and medium sand with some gravel. All for the soil borings were extended to the top of bedrock, which was encountered at between seven and 10.5 bgs. Groundwater was encountered in each soil boring between four and seven feet bgs at the time of drilling.

All of the monitoring wells were constructed using 1.0-inch-diameter schedule 40 polyvinyl chloride (PVC) with flush threaded joints and 0.01-inch factory-slotted well screens. MW-1 and MW-3 were completed with eight-foot well screens and MW-2 was completed with a seven-foot well screen. MW-4 and MW-5 were completed with five-foot well screens. Solid PVC risers, extending to ground surface, were used to complete each well. A clean sand pack was placed around the screened section of each monitoring well extending one to two feet above the top of the screen, with a bentonite seal placed above the sand pack. Flush-mounted road-box protective casings were installed over each monitoring well. Each well was developed after installation by removing eight to ten standing volumes of water using a peristaltic pump. Soil descriptions and monitoring well construction details are included on the soil boring logs in Appendix C. Atlantis Drilling, Inc. of Barrington, New Hampshire installed the soil borings and monitoring wells under direct supervision of **R.E.A.**

Photo-ionization detector (PID) readings on soil samples collected from all of the soil borings ranged between 0.2 and 5.8 ppmv, indicating the absence of widespread contamination. The highest PID reading was obtained on the soil sample collected at or just below the water table in the MW-4 boring, which is located adjacent to the former UST. Slight petroleum odors were noted during the completion of the soil boring for MW-1, located approximately 35 feet downgradient of the former UST. PID screening results are included on the soil boring logs in Appendix C. **R.E.A.'s** environmental scientist screened soil samples from the soil borings for the possible presence of volatile organic compounds (VOCs) using a RAE Systems mini-RAE 2000 portable PID. The PID was calibrated with an isobutylene standard gas to a benzene reference on the day of drilling.

After installation of the soil boring/monitoring wells, **R.E.A.** surveyed the locations of the boring/wells in relation to existing site features. Each boring/well was located in azimuth to an accuracy of ± 1.0 feet, and in elevation with an accuracy of ± 0.01 feet relative to an on-site benchmark of 100.00 feet.

2.4 Ground Water Elevations and Flow Direction

On 21 June 2006, ground-water flow in the unconfined surficial aquifer at the site was toward the southwest with an estimated hydraulic gradient of approximately 16 percent. Water-level measurements and elevation calculations for 21 June 2006, are presented in **Table 1** and the ground-water contour map prepared using this data is presented as **Figure 4**, Appendix A.

Static water-table elevations were computed for each monitoring well by subtracting measured depth-to-water readings from the surveyed top-of-casing (TOC) elevations, which are relative to an arbitrary site datum of 100.00 feet.

The effective porosity of the predominantly medium to coarse sand encountered below the water-table is presumably around 0.4, with hydraulic conductivities of 0.5 to 57 feet per day (Freeze & Cherry, 1979). Assuming Darcian flow, these estimates combine with the calculated horizontal gradient of 16 percent to yield an estimated range of ground-water flow velocities of between 0.2 to 23 feet per day. Contaminant migration would be less accounting for retardation and dispersion of the contaminants.

2.5 Ground Water Sampling and Analysis

At this time, ground water in the immediate vicinity and down-gradient of the former UST system does not appear to be impacted by petroleum contamination. No volatile organic compounds (VOCs) or total petroleum hydrocarbons (TPH) were detected in any of the water samples collected from four of the on-site monitoring wells. None of the Vermont Ground Water Enforcement Standard (VGESs)¹ for VOCs were exceeded in groundwater beneath the site. At this time, the extent of subsurface petroleum contamination appears to have been adequately defined and no downgradient sensitive receptors appear to be impacted or threatened by residual petroleum contamination.

No petroleum compounds were detected in the trip-blank sample, and the duplicate sample results (MW-4) were within the EPA recommended percentage difference of 30 percent. The analytical results are summarized on **Table 2**, and copies of the laboratory analytical reports are included as Appendix D. Contaminant distribution, based on samples collected on 21 June 2006, is shown on **Figure 5** in Appendix A.

Prior to sample collection, **R.E.A** field personnel measured the water level in each monitoring well and purged approximately three to five standing volumes of water from each well. All monitoring well samples were collected by pouring water directly into 40-milliliter glass vials with teflon-lined septum lids. The groundwater was transferred to the 40-millimeter glass vials, by means of a peristaltic pump and clear flexible tubing dedicated to each well. Each sample vial was preserved with hydrochloric acid to reduce the pH to less than 2 standard units (su).

Immediately after sample collection, field measurements were obtained for pH, specific conductivity, temperature, total dissolved solids (TDS), and oxygen reduction potential (ORP). A summary of the field measurement data is included on **Table 3**, in Appendix A.

¹The Vermont DEC has established groundwater enforcement standards for eight petroleum related VOCs, as follows: benzene - 5 ug/L; toluene - 1,000 ug/L; ethylbenzene - 700 ug/L; xylenes - 10,000 ug/L; MTBE - 40 ug/L; 1,3,5-trimethyl benzene – 4 ug/L; 1,2,4-trimethyl benzene – 5 ug/L; and naphthalene – 20 ug/L.

On 21 June 2006, ground water samples were collected from four monitoring wells (MW-1, MW-2, MW-3, and MW-4). MW-5 was dry at the time of the sampling event; therefore, no sample was collected. All ground water samples were analyzed for the possible presence of volatile organic compounds and total petroleum hydrocarbons (TPH) in accordance with U.S. EPA Methods 8260 and 8015-diesel range organics (DRO), respectively. All samples were transported under chain-of-custody in an ice-filled cooler to Endyne, Inc. of Williston, Vermont for laboratory analysis for laboratory analysis.

2.6 Investigation Procedures

The procedures used during the initial site investigation at the former Rice residence are consistent with the following guidance documents:

- *“Underground Storage Tank Closure and Site Assessment Requirements.”* Vermont Agency of Natural Resources, Waste Management Division. November 1997.
- *“Site Investigation Guidance.”* Vermont Agency of Natural Resources, Waste Management Division. June 2005.
- *“Corrective Action Guidance.”* Vermont Agency of Natural Resources, Waste Management Division. November 1997.
- *“Agency Guidelines for Petroleum Contaminated Soil and Debris.”* Vermont Agency of Natural Resources, Waste Management Division. August 1996.
- ASTM D 2488-93. *“Standard Practice for Description and Identification of Soils (Visual-Manual Procedure).”* American Society for Testing and Materials.
- ASTM D 5092-90. *“Standard Practice for Design and Installation of Ground Water Monitoring Wells in Aquifers.”* American Society for Testing and Materials.
- ASTM D 4750-87. *“Standard Test Method for Determining Subsurface Liquid Levels in a Borehole or Monitoring Well.”* American Society for Testing and Materials.
- ASTM D 4448-85a. *“Standard Guide for Sampling Ground Water Monitoring Wells.”* American Society for Testing and Materials.

3.0 SENSITIVE RECEPTOR IDENTIFICATION AND RISK ASSESSMENT

Based on available information, no sensitive receptors appear to be threatened or impacted by the residual petroleum contamination located in the vicinity of the former UST system.

3.1 Receptor Identification

The following sensitive receptors were identified in the vicinity of the subject property.

- Soils and groundwater within the general vicinity of the former UST system.
- Indoor air in the first floor living area of the former Rice residence, located approximately 10 feet southeast of the former UST system.
- The unnamed tributary of the Stevens Brook, located approximately 150 feet west of the former UST system.

3.2 Risk Assessment

On the basis of the information obtained during this investigation, **R.E.A.** has qualitatively assessed the risks that the subsurface contamination poses to human health and the environment. The findings are summarized as follows:

- The shallow overburden groundwater formation within the immediate vicinity of the former UST has not been impacted by petroleum contamination, based on the results of the ground water sampling event conducted on 21 June 2006.
- During UST removal the lower level of the former Rice residence was screened with a PID for the possible presence of VOCs. Reading of 20.3 ppmv were noted consistently throughout the entire lower level, however, no petroleum odors were noted. Access to the house could not be coordinated with the installation of soil borings; therefore the indoor air was not screened at that time.
- The unnamed tributary of the Stevens Brook is not likely to be impacted by petroleum contamination; no volatile organic compounds were detected in the groundwater samples collected from monitoring wells MW-1 and MW-3, which are situated between the former UST and the unnamed tributary. Also, no seeps or visible evidence of a petroleum release were noted along the stream bank.

4.0 DATA EVALUATION AND REGULATORY STATUS

Groundwater sampling results from 21 June 2006 indicate that the underlying ground water formation has not been impacted by petroleum contamination. No sensitive receptors appear to be impacted by residual contamination at this time.

Based on available information, active remediation at the site is not likely to be required by the VT DEC. Generally, the VT DEC requires active remediation when greater than 1/8" of free-product is present, or when human health or a sensitive receptor is impacted or threatened by contamination. The VT DEC may require another round of monitoring of ground water beneath the site to confirm the initial results.

A summary of the significant findings of the ISI is outlined below:

- No volatile organic compounds or total petroleum hydrocarbons were detected in the groundwater samples collected from MW-1, MW-2, MW-3, and MW-4 during the 21 June 2006 sampling event.
- MW-5 was dry at the time of the sampling event; therefore, no sample was collected during the 21 June 2006 sampling event.
- PID readings on soil samples collected during the completion of soil borings ranged from 0.2 to 5.8 ppm, which are below the VT DEC guideline of 10 ppm for fuel oil contaminated soils.
- Slight petroleum odors were noted during the completion of the soil boring for MW-1, located approximately 35 feet downgradient of the former UST.
- During UST removal the lower level of the former Rice residence was screened with a PID for the possible presence of VOCs. Reading of 20.3 ppmv were noted consistently throughout the entire lower level, however, no petroleum odors were noted.
- Ground water in the shallow overburden formation appears to flow primarily toward the southwest, which is consistent with the site topography and the location of the unnamed tributary of Stevens Brook.

5.0 RECOMMENDATIONS

On the basis of the results of this investigation and the conclusions stated above, **R.E.A.** makes the following recommendations.

1. The on-site monitoring wells (MW-1, MW-2, MW-3, MW-4 and MW-5) should be re-sampled to confirm the findings of the initial sampling event. All samples should be analyzed for the possible presence of volatile petroleum compounds in accordance with U.S. EPA Method 8021b.
2. As a precautionary measure, the indoor air in the lower level of the former Rice residence should be screened with a PID for the possible presence of VOCs.
3. A summary report should be submitted following the completion of the additional work, which should include recommendations for possible long-term monitoring or site closure.

6.0 LIMITATIONS

This report was completed by **Ross Environmental Associates, Inc. (R.E.A.)** for the sole use of Ms. Nancy Rice in connection with an assessment of on-site environmental conditions. Use of this report by any other person or for any other use is not authorized except with prior written consent of **R.E.A.** or Ms. Nancy Rice.

The work was undertaken to assess environmental conditions specifically on the subject property in accordance with generally accepted engineering and hydrogeological practices. No other warranty, express or implied, is made. Absolute assurance that any and all possible contamination at the site was identified cannot be provided.

The report conclusions are based, in part, on information provided by the client, their agents, or third parties, including state or local officials. **R.E.A.** assumes no responsibility for the accuracy and completeness of the information. Where visual observations are included in the report, they represent conditions at the time of the inspection, and may not be indicative of past or future site conditions.

7.0 REFERENCES

Doll, C.G. and others, 1961. "*Geologic Map of Vermont*", Office of the State Geologist.

Freeze, R. A., and Cherry, J.A., 1976. *Groundwater*, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 29 p.

Fetter, C.W., 1994. *Applied Hydrogeology, 3rd Ed.*, Prentice Hall, Englewood Cliffs, New Jersey, 98 p.

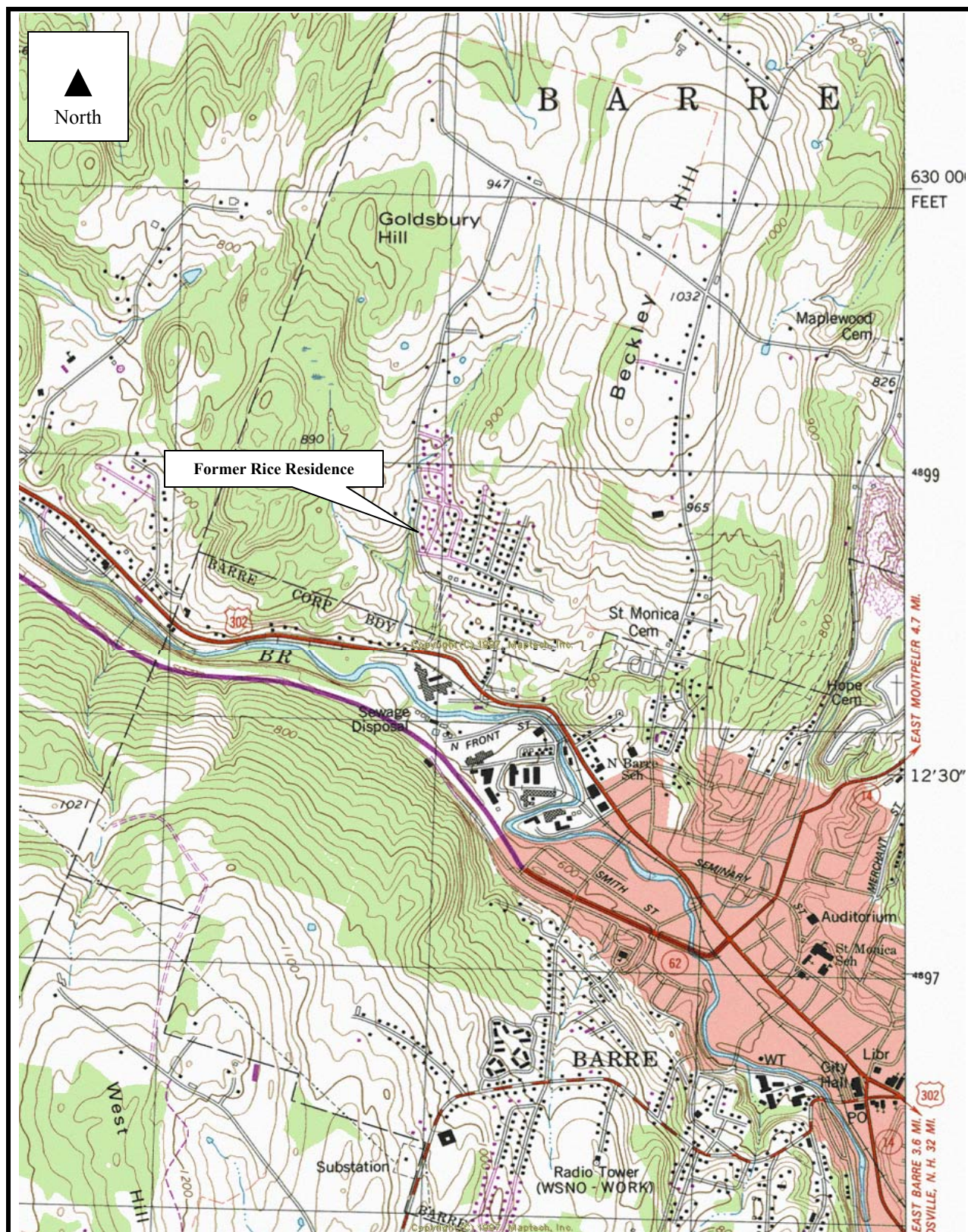
Stewart, D.P. and MacClintock, P., 1970. "*Surficial Geologic Map of Vermont*", Office of the State Geologist.

Maptech, 1998. Barre West Quadrangle Vermont. U.S. Geological Survey. 7.5 minute series (topographic), 1988. Maptech, Inc. Greenland, NH. 1998.

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FIGURES AND TABLES



Approximate Scale: 1 inch = 1,400 feet

Site Coordinates: 44° 13' 01.59" N, 72° 31' 18.97" W

Source: USGS, 1988. Barre West Quadrangle
1988 Topographic map (7.5 minute series).

Maptech, Inc. 1998.

R.E.A. Project No 26-047

Figure 1
Site Location Map
Former Rice Residence
Barre, Vermont



Former Rice Residence

CROSS ST

MISTY MTN DR

SPRING HOLLOW LN

MEADOWS DR

CANO DR

MOONLIGHT DR

LEDGE DR

GRANVIEW DR

RICHARDSON RD

FORD ST

VELIE A

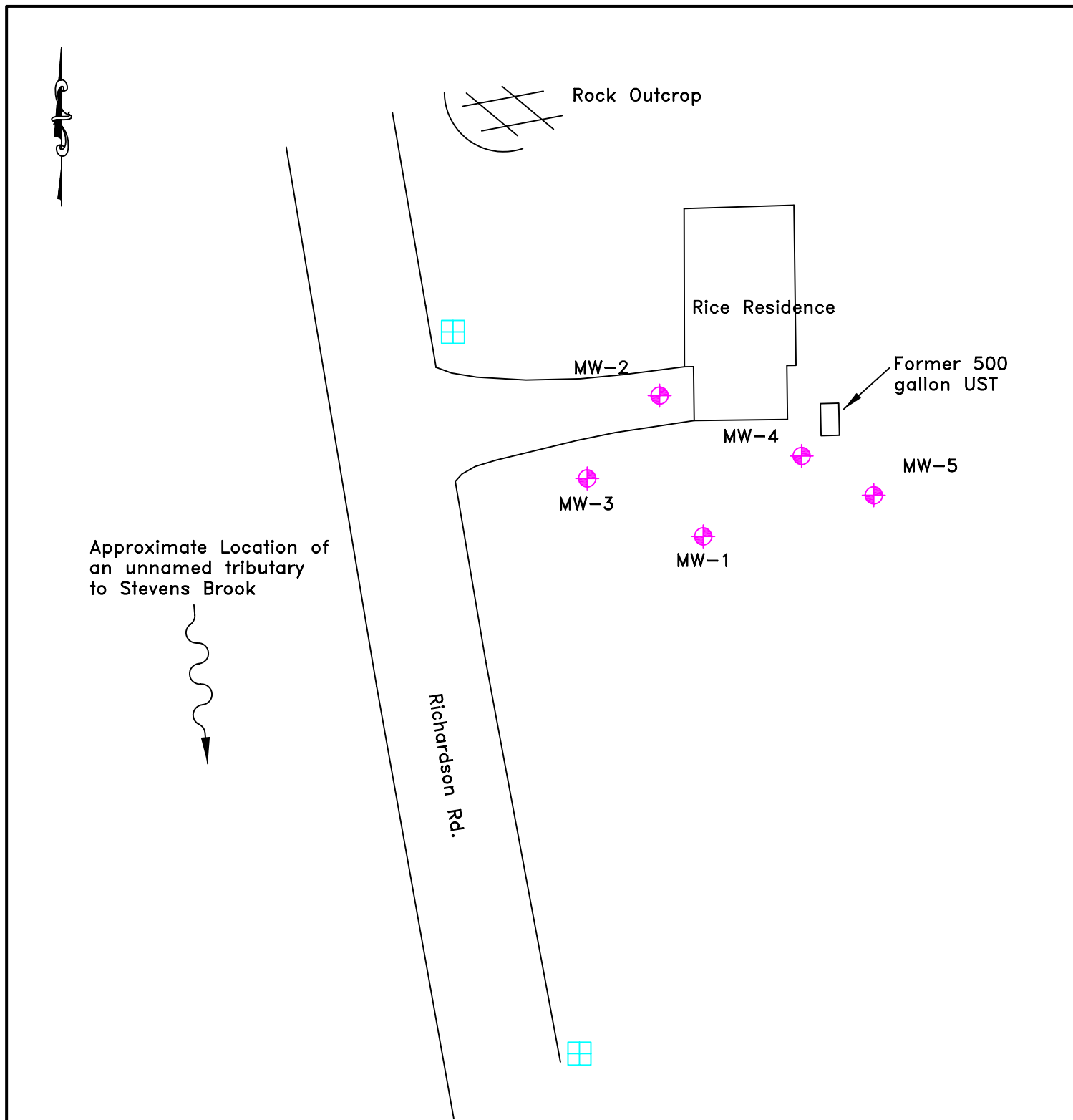
Figure 2

Former Rice Residence
117 Richardson Road
Barre, VT

Map Source:
Orthophotograph # 4407252
USDA. Photo Date. 2003

44° 13' 01.59" N
72° 31' 18.97" W

0 25 50 100 150 200
Meters



All Locations are Approximate

Legend:  Monitoring Well Location  Catch Basin

Scale: 1:30

Date: 27 July 2006

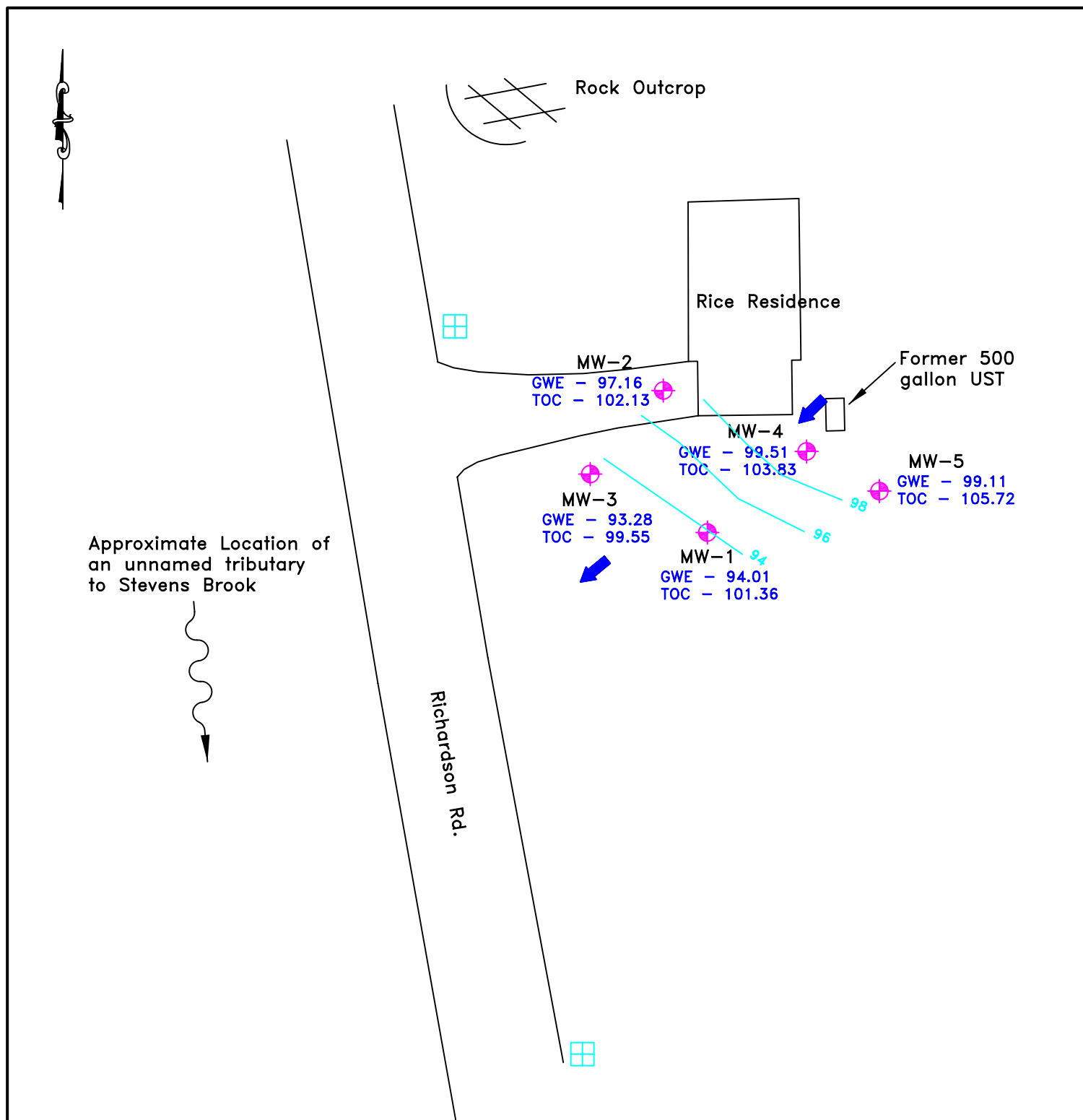
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FIGURE 3.
SITE PLAN
 (with monitoring well locations)
 Rice Residence - Barre, Vermont



All Locations are Approximate

Legend:  Monitoring Well Location  Catch Basin

GWE - Groundwater Elevation
TOC - Top of Well Casing

Scale: 1:30

Date: 27 July 2006

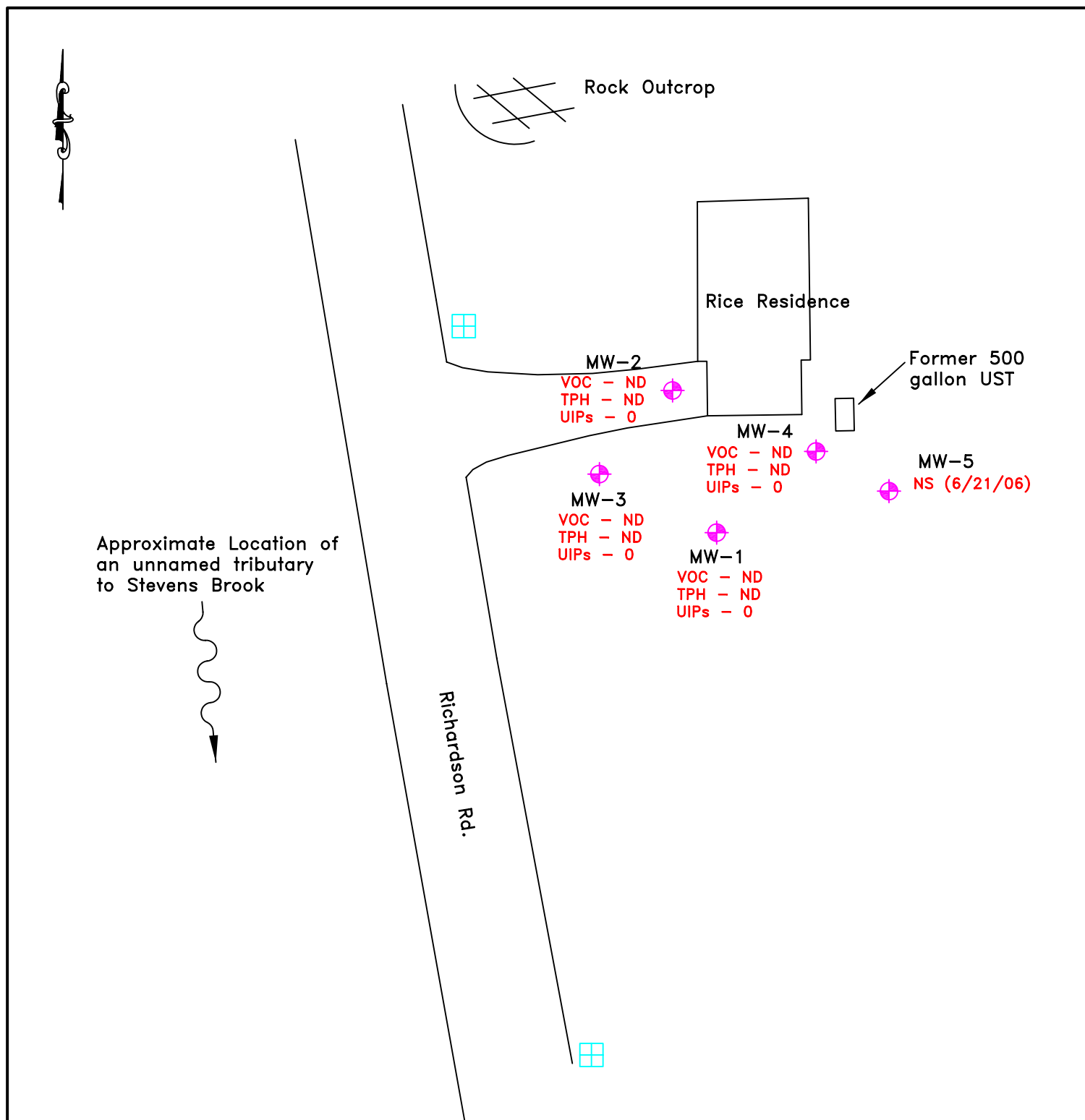
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FIGURE 4.
GROUNDWATER CONTOUR MAP
(Monitoring Date: 21 June 2006)
Rice Residence - Barre, Vermont



All Locations are Approximate

Legend:  Monitoring Well Location  Catch Basin

VOC - Total volatile organic compounds, ug/L
 TPH - Total petroleum hydrocarbons, mg/L
 UIP - Unidentified peaks
 ND - None Detected

Scale: 1:30

Date: 27 July 2006

File Name: 26047fig

Drawn By: NP



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FIGURE 5.
CONTAMINANT DISTRIBUTION
 (Monitoring Date: 21 June 2006)
 Rice Residence - Barre, Vermont

TABLE 1
GROUND WATER ELEVATION CALCULATIONS

Rice Residence
Barre, Vermont

Monitoring Date: 21 June 2006

Well I.D.	Top of Casing Elevation (ft)	Depth to Water (feet, TOC)	Water Table Elevation (ft)
MW-1	101.36	7.35	94.01
MW-2	102.13	4.97	97.16
MW-3	99.55	6.27	93.28
MW-4	103.83	4.32	99.51
MW-5	105.72	6.61	99.11

All values reported in feet relative to arbitrary site datum of 100.00 feet

TABLE 2
GROUND-WATER ANALYTICAL RESULTS

Rice Residence
Barre , Vermont

Monitoring Dates: 21 June 2006

Sample ID	MTBE	Benzene	Toluene	Ethyl benzene	Total Xylenes	1,3,5 TMB	1,2,4 TMB	Naphthalene	Total VOCs	TPH (mg/L)
MW-1	ND<2.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<2.0	ND	ND <0.40
MW-2	ND<2.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<2.0	ND	ND <0.40
MW-3	ND<2.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<2.0	ND	ND <0.40
MW-4	ND<2.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<2.0	ND	ND <0.40
VGES	40	5.0	1,000	700	10,000	4.0	5.0	20	--	--
MW-4	ND<2.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<2.0	ND	ND <0.40
Dup, MW-4	ND<2.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<2.0	ND	ND <0.40
% Difference	--	--	--	--	--	--	--	--	---	---
Trip Blank	ND<2.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<2.0	ND	---
VGES	40	5.0	1,000	700	10,000	4.0	5.0	20	--	--

All results reported in micrograms per liter (ug/L) unless indicated otherwise.

ND: Not detected at indicated detection limit.

TPH: Total Petroleum Hydrocarbons

All samples analyzed for the possible presence of VOCs and TPH in accordance with EPA Method 8260 and 8015DRO, respectively.

TABLE 3
FIELD MEASUREMENT DATA

Rice Residence
Barre, Vermont

Monitoring Date: 21 June 2006

Well ID	pH (su)	temperature (°C)	Specific conductivity (uS)	ORP (mV)	TDS (ppm)	Comments
MW-1	7.13	14.2	996	21	684	Very silty, no odor
MW-2	7.34	15.3	1,376	-4	961	Silty, light odor
MW-3	7.17	13.2	1,270	39	882	Silty, no odor
MW-4	6.77	14.3	867	9	589	Little water, no odor
MW-5	n/a	n/a	n/a	n/a	n/a	Not enough water to sample

pH reported in standard units (s.u.).

Specific conductivity reported in microsiemens (uS) or millisiemens (mS).

Oxidation-reduction potential (ORP) reported in millivolts (mV).

Total dissolved solids (TDS) reported in parts per million (ppm) or parts per (ppt) thousand.

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SITE PHOTOGRAPHS



RICE RESIDENCE – BARRE, VERMONT
(Site Overview with former UST location – view toward north)



RICE RESIDENCE – BARRE, VERMONT
(Installation of MW-1 – view toward northeast)



RICE RESIDENCE – BARRE, VERMONT
(Drilling MW-2 – view toward east)



RICE RESIDENCE – BARRE, VERMONT
(Installing MW-3 – view toward east)


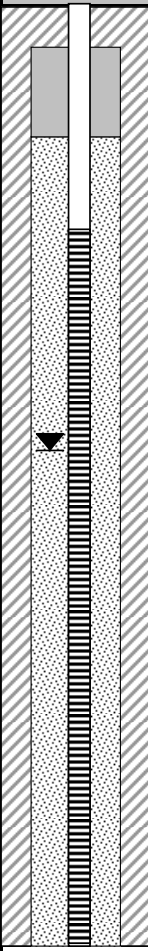


RICE RESIDENCE – BARRE, VERMONT
(Drilling MW-5, note location of MW-4 – view toward south)


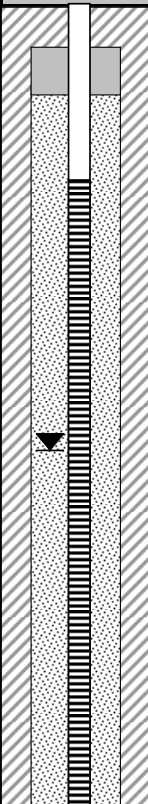







**SOIL BORING
MONITORING WELL LOGS**


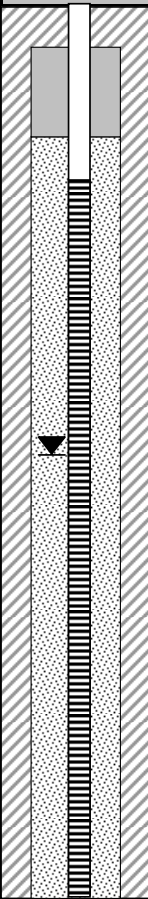







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				BORING / WELL IDENTIFICATION: MW-1		
				Site Name:	Rice Residence	
				Site Location:	Barre, Vermont	
Well Depth:	10.5	Boring Depth:	10.5	Installation Date:	14-Jun-06	
Depth to Water (during drilling):			5'	Job Number:	26-047	
Screen Diameter:	1"	Depth:	2.5 - 10.5'	REA Representative:	Nathan Page	
Screen Type/Size:	0.01' slot Schedule 40 PVC			Drilling Company:	Atlantis Drilling	
Riser Diameter:	1"	Depth:	0 - 2.5'	Sampling Method:	Geoprobe	
Riser Type/Size:	Schedule 40 PVC			Reference Point (RP):		
Depth (ft)	Sample Depth (ft)	Blows/6" and Recovery (ft)	Sample Description / Notes	PID (ppm)	Well Profile	Legend
	0-4		Moist brown Topsoil to 4"			<div>Concrete</div> <div>Native Material</div> <div>Bentonite</div> <div>Filter Sand</div> <div>Riser</div> <div>Screen</div> <div>Water Level</div>
			Dense brown, Clayey SILT with Pebbles and Cobbles. Moist at 3.5'. Slight odors.			
2						
				0.4		
4	4-8		Brown, moist Clayey SILT with Weathered Rock at 7.5'. Saturated at 5'.	0.2		
				0.4		
6						
8	8-10.5		Brown Silty SAND with Weathered Rock. Slight odors at 8.5'	0.5		
				0.2		
10			Same as above with some Clay			
			Bedrock Refusal, well set at 10.5'	0.4		

PROPORTIONS USED		BLOW COUNT (COHESIVE SOILS)		BLOW COUNT (GRANULAR SOILS)		NOTES:
AND 33-50%	LITTLE 10-20%	<2 VERY SOFT	8-15 STIFF	0-4 VERY LOOSE	30-50 DENSE	MiniRAE 2000 PID used.
SOME 20-33%	TRACE 0-10%	2-4 SOFT	15-30 VERY STIFF	4-10 LOOSE	>50 VERY DENSE	
		4-8 MEDIUM STIFF	>30 HARD	10-30 MEDIUM DENSE		

				BORING / WELL IDENTIFICATION: MW-2		
				Site Name:	Rice Residence	
				Site Location:	Barre, Vermont	
Well Depth:	9	Boring Depth:	9	Installation Date:	14-Jun-06	
Depth to Water (during drilling):			5'	Job Number:	26-047	
Screen Diameter:	1"	Depth:	2 - 9'	REA Representative:	Nathan Page	
Screen Type/Size:	0.01' slot Schedule 40 PVC			Drilling Company:	Atlantis Drilling	
Riser Diameter:	1"	Depth:	0 - 2'	Sampling Method:	Geoprobe	
Riser Type/Size:	Schedule 40 PVC			Reference Point (RP):		
Depth (ft)	Sample Depth (ft)	Blows/6" and Recovery (ft)	Sample Description / Notes	PID (ppm)	Well Profile	Legend
	0-4		Sand and Gravel to 4". Brown, moist Clayey SAND with Weathered Rock to 2.5'			 Concrete
						 Native Material
						 Bentonite
2			Dark Weathered Rock and Clay.	0.3		 Filter Sand
						 Riser
						 Screen
						 Water Level
4	4-8		Brown, moist Silty SAND with little Weathered Rock. Weathered Schist at 6.5' to 6.6'. Saturated at 5'.	0.2		
6				0.6		
8	8-9			0.6		
			Bedrock Refusal, well set at 9'	0.3		
10						
PROPORTIONS USED		BLOW COUNT (COHESIVE SOILS)		BLOW COUNT (GRANULAR SOILS)		NOTES:
AND 33-50%	LITTLE 10-20%	<2 VERY SOFT	8-15 STIFF	0-4 VERY LOOSE	30-50 DENSE	MiniRAE 2000 PID used.
SOME 20-33%	TRACE 0-10%	2-4 SOFT	15-30 VERY STIFF	4-10 LOOSE	>50 VERY DENSE	
		4-8 MEDIUM STIFF	>30 HARD	10-30 MEDIUM DENSE		

				BORING / WELL IDENTIFICATION: MW-3		
				Site Name:	Rice Residence	
				Site Location:	Barre, Vermont	
Well Depth:	10	Boring Depth:	10	Installation Date:	14-Jun-06	
Depth to Water (during drilling):			5'	Job Number:	26-047	
Screen Diameter:	1"	Depth:	2 - 10'	REA Representative:	Nathan Page	
Screen Type/Size:	0.01' slot Schedule 40 PVC			Drilling Company:	Atlantis Drilling	
Riser Diameter:	1"	Depth:	0 - 2'	Sampling Method:	Geoprobe	
Riser Type/Size:	Schedule 40 PVC			Reference Point (RP):		
Depth (ft)	Sample Depth (ft)	Blows/6" and Recovery (ft)	Sample Description / Notes	PID (ppm)	Well Profile	Legend
	0-4		Moist, brown Topsoil to 5". Weathered Rock and Clay.			 Concrete
						 Native Material
						 Bentonite
2			Brown, Silty SAND with Weathered Rock to 3.8'	0.5		 Filter Sand
						 Riser
						 Screen
						 Water Level
4	4-8		Dark weathered Rock and Silt.	0.7		
6			Moist, brown Sand and Silt with Weathered Rock. 2" band of dark Weathered Rock at 5.5'. Saturated at 5'.	0.5		
8	8-10			1.0		
				0.5		
10			Bedrock Refusal, well set at 10'	0.6		
PROPORTIONS USED		BLOW COUNT (COHESIVE SOILS)		BLOW COUNT (GRANULAR SOILS)		NOTES:
AND 33-50%	LITTLE 10-20%	<2 VERY SOFT	8-15 STIFF	0-4 VERY LOOSE	30-50 DENSE	MiniRAE 2000 PID used.
SOME 20-33%	TRACE 0-10%	2-4 SOFT	15-30 VERY STIFF	4-10 LOOSE	>50 VERY DENSE	
		4-8 MEDIUM STIFF	>30 HARD	10-30 MEDIUM DENSE		



BORING / WELL IDENTIFICATION: MW-4

Site Name: Rice Residence

Site Location: Barre, Vermont

Well Depth: 7.5

Boring Depth: 7.5

Installation Date: 14-Jun-06

Depth to Water (during drilling): 4'

Job Number: 26-047

Screen Diameter: 1"

Depth: 2.5 - 7.5'

REA Representative: Nathan Page

Screen Type/Size: 0.01' slot Schedule 40 PVC

Drilling Company: Atlantis Drilling

Riser Diameter: 1"

Depth: 0 - 2.5'

Sampling Method: Geoprobe

Riser Type/Size: Schedule 40 PVC

Reference Point (RP):

Depth (ft)	Sample Depth (ft)	Blows/6" and Recovery (ft)	Sample Description / Notes			PID (ppm)	Well Profile	Legend		
	0-4		Dark brown, moist Fill Material.					Concrete		
										Native Material
			Moist, brown Silt and Clay with Weathered Rock.						Bentonite	
										Filter Sand
2								5.8		
4	4-7.5					0.8			Riser	
6									Screen	
			Dark Weathered Rock and Silt.					Water Level		
			Bedrock Refusal, well set at 10'.			0.5				
8										
10										
PROPORTIONS USED		BLOW COUNT (COHESIVE SOILS)		BLOW COUNT (GRANULAR SOILS)		NOTES:				
AND 33-50%	LITTLE 10-20%	<2 VERY SOFT	8-15 STIFF	0-4 VERY LOOSE	30-50 DENSE	MiniRAE 2000 PID used.				
SOME 20-33%	TRACE 0-10%	2-4 SOFT	15-30 VERY STIFF	4-10 LOOSE	>50 VERY DENSE					
		4-8 MEDIUM STIFF	>30 HARD	10-30 MEDIUM DENSE						



BORING / WELL IDENTIFICATION: MW-5

Site Name: Rice Residence

Site Location: Barre, Vermont

Well Depth: 7 Boring Depth: 7 Installation Date: 14-Jun-06

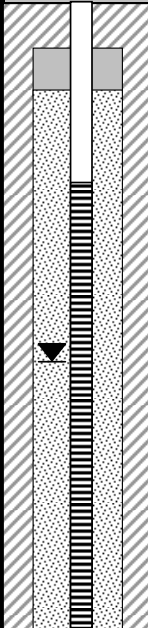







Depth to Water (during drilling): 4' Job Number: 26-047

Screen Diameter: 1" Depth: 2 - 7' REA Representative: Nathan Page

Screen Type/Size: 0.01' slot Schedule 40 PVC Drilling Company: Atlantis Drilling

Riser Diameter: 1" Depth: 0 - 2' Sampling Method: Geoprobe

Riser Type/Size: Schedule 40 PVC Reference Point (RP):

Depth (ft)	Sample Depth (ft)	Blows/6" and Recovery (ft)	Sample Description / Notes		PID (ppm)	Well Profile	Legend
	0-4		Brown Topsoil				 Concrete
			Weathered Rock with Sand and Silt.				 Native Material
							 Bentonite
2							 Filter Sand
							 Riser
4	4-7				0.6		 Screen
							 Water Level
					5.5		
6			Dense Brown SAND				
			Weathered Rock and Sand				
			Bedrock Refusal, well set at 7'.		1.2		
8							
10							
PROPORTIONS USED		BLOW COUNT (COHESIVE SOILS)		BLOW COUNT (GRANULAR SOILS)		NOTES:	
AND 33-50%	LITTLE 10-20%	<2 VERY SOFT	8-15 STIFF	0-4 VERY LOOSE	30-50 DENSE	MiniRAE 2000 PID used.	
SOME 20-33%	TRACE 0-10%	2-4 SOFT	15-30 VERY STIFF	4-10 LOOSE	>50 VERY DENSE		
		4-8 MEDIUM STIFF	>30 HARD	10-30 MEDIUM DENSE			

**LABORATORY
ANALYTICAL REPORTS**

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Laboratory Services

160 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

Ross Environ. Assoc., Inc.
PO Box 1533, 96 Taber Hill Rd
Stowe, VT 05672
Attn: Nate Page

PROJECT: Rice/26-047
ORDER ID: 45966
RECEIVE DATE: June 23, 2006
REPORT DATE: July 3, 2006

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody. Different groups of analyses may be reported under separate cover.

All samples were prepared and analyzed by requirements outlined in the referenced methods and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced methods.

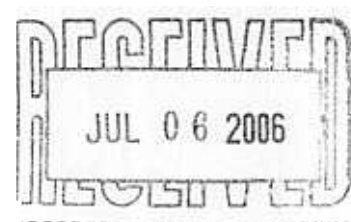
Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which include matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits, unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

enclosures





ENDYNE, INC

Laboratory Services

160 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

CLIENT: Ross Environ. Assoc., Inc.

ORDER ID: 45966

PROJECT: Rice/26-047

DATE RECEIVED: June 23, 2006

REPORT DATE: July 3, 2006

SAMPLER: NP/JG

ANALYST: 207

Ref. Number: 277043

Site: MW-1

Date Sampled: June 21, 2006

Time: 11:30 AM

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>	<u>Analysis Date</u>
TPH 8015 DRO	< 0.40	mg/L	SW 8015B	6/29/06

Ref. Number: 277044

Site: MW-2

Date Sampled: June 21, 2006

Time: 11:50 AM

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>	<u>Analysis Date</u>
TPH 8015 DRO	< 0.40	mg/L	SW 8015B	6/29/06

Ref. Number: 277045

Site: MW-3

Date Sampled: June 21, 2006

Time: 11:45 AM

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>	<u>Analysis Date</u>
TPH 8015 DRO	< 0.40	mg/L	SW 8015B	6/29/06

Ref. Number: 277046

Site: MW-4

Date Sampled: June 21, 2006

Time: 11:15 AM

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>	<u>Analysis Date</u>
TPH 8015 DRO	< 0.40	mg/L	SW 8015B	6/29/06

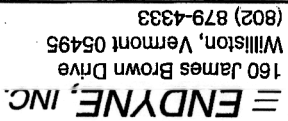
Ref. Number: 277047

Site: Dup

Date Sampled: June 21, 2006

Time: NI

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>	<u>Analysis Date</u>
TPH 8015 DRO	< 0.40	mg/L	SW 8015B	6/29/06






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Special Reporting Instructions:

Project Name: RICE		Reporting Address: PEA		Billing Address: PEA	
Endyne Order ID: 43966		Company: PEA		Sampler Name: NP.Tg	
(Lab Use Only)		Contact Name/Phone #:		Phone #: same	
B.O		Note Page			
-I		802 253-4280			
-S					

Ref # (Lab Use Only)	Sample Identification	Matrix	G A R C M P	Date/Time 6/21/00	Sample Containers No. Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
	MW-1	H ₂ O	X	11:30	4 40 mL		23, 24	HCL	
	MW-2			11:50					
	MW-3			11:45					
	MW-4			11:15					
	DUP			11:05					
	T.B.								

Relinquished by: 	Date/Time 6/21/00 14:35	Received by: 	Date/Time 6/22/02	Received by: 	Date/Time 6-28-02
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Requested Analyses

New York State Project: Yes										Requested Analyses									
No										Yes									
1	pH	6	TKN	11	Total Solids	16	Sulfate	21	1664 TPH/FOG	26	8270 PAH	Temp.	7-5-02	Comment					
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	8015 GRO	27	PP13 Metals								
3	Ammonia-N	8	Total Diss. P	13	TDS	18	COD	23	8015 DRO	28	RCRA8 Metals								
4	Nitrite N	9	BOD	14	Turbidity	19	8021B	24	8260/8260B	29									
5	Nitrate N	10	Alkalinity	15	Conductivity	20	8010/8020	25	8270 B/N or Acid	30									
31	Metals (As is, Total, Diss.) Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Hg, K, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Ti, V, Zn																		
32	TC1P (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)																		
34	Other																		



ENDYNE, INC.

LABORATORY REPORT

Laboratory Services

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Ross Environ. Assoc., Inc.
PO Box 1533, 96 Taber Hill Rd
Stowe, VT 05672
Attn: Nate Page

PROJECT: Rice/26-047
ORDER ID: 45966
RECEIVE DATE: June 23, 2006
REPORT DATE: July 7, 2006

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody. Different groups of analyses may be reported under separate cover.

All samples were prepared and analyzed by requirements outlined in the referenced methods and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced methods.

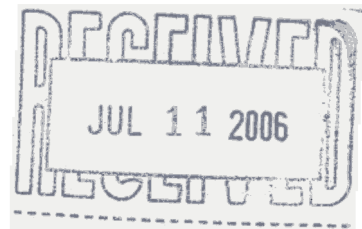
Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which include matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits, unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

enclosures





ENDYNE, INC.

Laboratory Services

160 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

SW 8260B

CLIENT: Ross Environ. Assoc., Inc.
PROJECT: Rice/26-047
SITE: MW-1
DATE RECEIVED: June 23, 2006
REPORT DATE: July 7, 2006
ANALYSIS DATE: July 3, 2006

ORDER ID: 45966
REFERENCE NUMBER: 277043
DATE SAMPLED: June 21, 2006
TIME SAMPLED: 11:30 AM
SAMPLER: NP/JG
ANALYST: 725

Parameter	Result ug/L	Parameter	Result ug/L
Acetone	< 10.0	1,1-Dichloropropene	< 1.0
Benzene	< 1.0	cis-1,3-Dichloropropene	< 1.0
Bromobenzene	< 1.0	trans-1,3-Dichloropropene	< 1.0
Bromochloromethane	< 2.0	Diethyl Ether	< 5.0
Bromodichloromethane	< 1.0	Ethylbenzene	< 1.0
Bromoform	< 2.0	Hexachlorobutadiene	< 2.0
Bromomethane	< 5.0	2-Hexanone	< 10.0
2-Butanone	< 10.0	Isopropylbenzene	< 1.0
n-Butylbenzene	< 1.0	p-Isopropyltoluene	< 1.0
sec-Butylbenzene	< 1.0	Methylene Chloride	< 5.0
tert-Butylbenzene	< 1.0	4-Methyl-2-Pentanone	< 10.0
Carbon Disulfide	< 5.0	MTBE	< 2.0
Carbon Tetrachloride	< 1.0	Naphthalene	< 2.0
Chlorobenzene	< 1.0	n-Propylbenzene	< 1.0
Chloroethane	< 5.0	Styrene	< 1.0
2-Chloroethyl Vinyl Ether	< 20.0	1,1,1,2-Tetrachloroethane	< 2.0
Chloroform	< 1.0	1,1,2,2-Tetrachloroethane	< 2.0
Chloromethane	< 3.0	Tetrachloroethene	< 1.0
4-Chlorotoluene	< 1.0	Tetrahydrofuran	< 10.0
2-Chlorotoluene	< 1.0	Toluene	< 1.0
Dibromochloromethane	< 2.0	1,2,3-Trichlorobenzene	< 2.0
1,2-Dibromo-3-Chloropropane	< 2.0	1,2,4-Trichlorobenzene	< 2.0
1,2-Dibromoethane	< 2.0	1,1,1-Trichloroethane	< 1.0
Dibromomethane	< 2.0	1,1,2-Trichloroethane	< 1.0
1,2-Dichlorobenzene	< 1.0	Trichloroethene	< 1.0
1,3-Dichlorobenzene	< 1.0	Trichlorofluoromethane	< 2.0
1,4-Dichlorobenzene	< 1.0	1,2,3-Trichloropropane	< 2.0
Dichlorodifluoromethane	< 5.0	1,2,4-Trimethylbenzene	< 1.0
1,1-Dichloroethane	< 1.0	1,3,5-Trimethylbenzene	< 1.0
1,2-Dichloroethane	< 1.0	Vinyl Chloride	< 2.0
1,1-Dichloroethene	< 1.0	Xylenes, Total	< 2.0
cis-1,2-Dichloroethene	< 1.0	Surrogate 1	96.0%
trans-1,2-Dichloroethene	< 1.0	Surrogate 2	100.0%
1,2-Dichloropropane	< 1.0	Surrogate 3	98.0%
1,3-Dichloropropane	< 1.0	UIP's	0.
2,2-Dichloropropane	< 1.0		



ENDYNE, INC.

Laboratory Services

160 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

SW 8260B

CLIENT: Ross Environ. Assoc., Inc.
PROJECT: Rice/26-047
SITE: MW-2
DATE RECEIVED: June 23, 2006
REPORT DATE: July 7, 2006
ANALYSIS DATE: July 3, 2006

ORDER ID: 45966
REFERENCE NUMBER: 277044
DATE SAMPLED: June 21, 2006
TIME SAMPLED: 11:50 AM
SAMPLER: NP/JG
ANALYST: 725

<u>Parameter</u>	<u>Result</u> <u>ug/L</u>	<u>Parameter</u>	<u>Result</u> <u>ug/L</u>
Acetone	< 10.0	1,1-Dichloropropene	< 1.0
Benzene	< 1.0	cis-1,3-Dichloropropene	< 1.0
Bromobenzene	< 1.0	trans-1,3-Dichloropropene	< 1.0
Bromochloromethane	< 2.0	Diethyl Ether	< 5.0
Bromodichloromethane	< 1.0	Ethylbenzene	< 1.0
Bromoform	< 2.0	Hexachlorobutadiene	< 2.0
Bromomethane	< 5.0	2-Hexanone	< 10.0
2-Butanone	< 10.0	Isopropylbenzene	< 1.0
n-Butylbenzene	< 1.0	p-Isopropyltoluene	< 1.0
sec-Butylbenzene	< 1.0	Methylene Chloride	< 5.0
tert-Butylbenzene	< 1.0	4-Methyl-2-Pentanone	< 10.0
Carbon Disulfide	< 5.0	MTBE	< 2.0
Carbon Tetrachloride	< 1.0	Naphthalene	< 2.0
Chlorobenzene	< 1.0	n-Propylbenzene	< 1.0
Chloroethane	< 5.0	Styrene	< 1.0
2-Chloroethyl Vinyl Ether	< 20.0	1,1,1,2-Tetrachloroethane	< 2.0
Chloroform	< 1.0	1,1,2,2-Tetrachloroethane	< 2.0
Chloromethane	< 3.0	Tetrachloroethene	< 1.0
4-Chlorotoluene	< 1.0	Tetrahydrofuran	< 10.0
2-Chlorotoluene	< 1.0	Toluene	< 1.0
Dibromochloromethane	< 2.0	1,2,3-Trichlorobenzene	< 2.0
1,2-Dibromo-3-Chloropropane	< 2.0	1,2,4-Trichlorobenzene	< 2.0
1,2-Dibromoethane	< 2.0	1,1,1-Trichloroethane	< 1.0
Dibromomethane	< 2.0	1,1,2-Trichloroethane	< 1.0
1,2-Dichlorobenzene	< 1.0	Trichloroethene	< 1.0
1,3-Dichlorobenzene	< 1.0	Trichlorofluoromethane	< 2.0
1,4-Dichlorobenzene	< 1.0	1,2,3-Trichloropropane	< 2.0
Dichlorodifluoromethane	< 5.0	1,2,4-Trimethylbenzene	< 1.0
1,1-Dichloroethane	< 1.0	1,3,5-Trimethylbenzene	< 1.0
1,2-Dichloroethane	< 1.0	Vinyl Chloride	< 2.0
1,1-Dichloroethene	< 1.0	Xylenes, Total	< 2.0
cis-1,2-Dichloroethene	< 1.0	Surrogate 1	98.0%
trans-1,2-Dichloroethene	< 1.0	Surrogate 2	101.0%
1,2-Dichloropropane	< 1.0	Surrogate 3	99.0%
1,3-Dichloropropane	< 1.0	UIP's	0.
2,2-Dichloropropane	< 1.0		

**ENDYNE, INC****Laboratory Services**

160 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT**SW 8260B**

CLIENT: Ross Environ. Assoc., Inc.
PROJECT: Rice/26-047
SITE: MW-3
DATE RECEIVED: June 23, 2006
REPORT DATE: July 7, 2006
ANALYSIS DATE: July 3, 2006

ORDER ID: 45966
REFERENCE NUMBER: 277045
DATE SAMPLED: June 21, 2006
TIME SAMPLED: 11:45 AM
SAMPLER: NP/JG
ANALYST: 725

<u>Parameter</u>	<u>Result</u> <u>ug/L</u>	<u>Parameter</u>	<u>Result</u> <u>ug/L</u>
Acetone	< 10.0	1,1-Dichloropropene	< 1.0
Benzene	< 1.0	cis-1,3-Dichloropropene	< 1.0
Bromobenzene	< 1.0	trans-1,3-Dichloropropene	< 1.0
Bromochloromethane	< 2.0	Diethyl Ether	< 5.0
Bromodichloromethane	< 1.0	Ethylbenzene	< 1.0
Bromoform	< 2.0	Hexachlorobutadiene	< 2.0
Bromomethane	< 5.0	2-Hexanone	< 10.0
2-Butanone	< 10.0	Isopropylbenzene	< 1.0
n-Butylbenzene	< 1.0	p-Isopropyltoluene	< 1.0
sec-Butylbenzene	< 1.0	Methylene Chloride	< 5.0
tert-Butylbenzene	< 1.0	4-Methyl-2-Pentanone	< 10.0
Carbon Disulfide	< 5.0	MTBE	< 2.0
Carbon Tetrachloride	< 1.0	Naphthalene	< 2.0
Chlorobenzene	< 1.0	n-Propylbenzene	< 1.0
Chloroethane	< 5.0	Styrene	< 1.0
2-Chloroethyl Vinyl Ether	< 20.0	1,1,1,2-Tetrachloroethane	< 2.0
Chloroform	< 1.0	1,1,2,2-Tetrachloroethane	< 2.0
Chloromethane	< 3.0	Tetrachloroethene	< 1.0
4-Chlorotoluene	< 1.0	Tetrahydrofuran	< 10.0
2-Chlorotoluene	< 1.0	Toluene	< 1.0
Dibromochloromethane	< 2.0	1,2,3-Trichlorobenzene	< 2.0
1,2-Dibromo-3-Chloropropane	< 2.0	1,2,4-Trichlorobenzene	< 2.0
1,2-Dibromoethane	< 2.0	1,1,1-Trichloroethane	< 1.0
Dibromomethane	< 2.0	1,1,2-Trichloroethane	< 1.0
1,2-Dichlorobenzene	< 1.0	Trichloroethene	< 1.0
1,3-Dichlorobenzene	< 1.0	Trichlorofluoromethane	< 2.0
1,4-Dichlorobenzene	< 1.0	1,2,3-Trichloropropane	< 2.0
Dichlorodifluoromethane	< 5.0	1,2,4-Trimethylbenzene	< 1.0
1,1-Dichloroethane	< 1.0	1,3,5-Trimethylbenzene	< 1.0
1,2-Dichloroethane	< 1.0	Vinyl Chloride	< 2.0
1,1-Dichloroethene	< 1.0	Xylenes, Total	< 2.0
cis-1,2-Dichloroethene	< 1.0	Surrogate 1	100.0%
trans-1,2-Dichloroethene	< 1.0	Surrogate 2	100.0%
1,2-Dichloropropane	< 1.0	Surrogate 3	101.0%
1,3-Dichloropropane	< 1.0	UIP's	0.
2,2-Dichloropropane	< 1.0		



ENDYNE, INC.

Laboratory Services

160 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

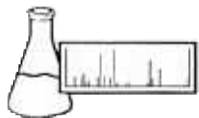
LABORATORY REPORT

SW 8260B

CLIENT: Ross Environ. Assoc., Inc.
PROJECT: Rice/26-047
SITE: MW-4
DATE RECEIVED: June 23, 2006
REPORT DATE: July 7, 2006
ANALYSIS DATE: July 3, 2006

ORDER ID: 45966
REFERENCE NUMBER: 277046
DATE SAMPLED: June 21, 2006
TIME SAMPLED: 11:15 AM
SAMPLER: NP/JG
ANALYST: 725

<u>Parameter</u>	<u>Result</u> <u>ug/L</u>	<u>Parameter</u>	<u>Result</u> <u>ug/L</u>
Acetone	< 10.0	1,1-Dichloropropene	< 1.0
Benzene	< 1.0	cis-1,3-Dichloropropene	< 1.0
Bromobenzene	< 1.0	trans-1,3-Dichloropropene	< 1.0
Bromochloromethane	< 2.0	Diethyl Ether	< 5.0
Bromodichloromethane	< 1.0	Ethylbenzene	< 1.0
Bromoform	< 2.0	Hexachlorobutadiene	< 2.0
Bromomethane	< 5.0	2-Hexanone	< 10.0
2-Butanone	< 10.0	Isopropylbenzene	< 1.0
n-Butylbenzene	< 1.0	p-Isopropyltoluene	< 1.0
sec-Butylbenzene	< 1.0	Methylene Chloride	< 5.0
tert-Butylbenzene	< 1.0	4-Methyl-2-Pentanone	< 10.0
Carbon Disulfide	< 5.0	MTBE	< 2.0
Carbon Tetrachloride	< 1.0	Naphthalene	< 2.0
Chlorobenzene	< 1.0	n-Propylbenzene	< 1.0
Chloroethane	< 5.0	Styrene	< 1.0
2-Chloroethyl Vinyl Ether	< 20.0	1,1,1,2-Tetrachloroethane	< 2.0
Chloroform	< 1.0	1,1,2,2-Tetrachloroethane	< 2.0
Chloromethane	< 3.0	Tetrachloroethene	< 1.0
4-Chlorotoluene	< 1.0	Tetrahydrofuran	< 10.0
2-Chlorotoluene	< 1.0	Toluene	< 1.0
Dibromochloromethane	< 2.0	1,2,3-Trichlorobenzene	< 2.0
1,2-Dibromo-3-Chloropropane	< 2.0	1,2,4-Trichlorobenzene	< 2.0
1,2-Dibromoethane	< 2.0	1,1,1-Trichloroethane	< 1.0
Dibromomethane	< 2.0	1,1,2-Trichloroethane	< 1.0
1,2-Dichlorobenzene	< 1.0	Trichloroethene	< 1.0
1,3-Dichlorobenzene	< 1.0	Trichlorofluoromethane	< 2.0
1,4-Dichlorobenzene	< 1.0	1,2,3-Trichloropropane	< 2.0
Dichlorodifluoromethane	< 5.0	1,2,4-Trimethylbenzene	< 1.0
1,1-Dichloroethane	< 1.0	1,3,5-Trimethylbenzene	< 1.0
1,2-Dichloroethane	< 1.0	Vinyl Chloride	< 2.0
1,1-Dichloroethene	< 1.0	Xylenes, Total	< 2.0
cis-1,2-Dichloroethene	< 1.0	Surrogate 1	99.0%
trans-1,2-Dichloroethene	< 1.0	Surrogate 2	101.0%
1,2-Dichloropropane	< 1.0	Surrogate 3	99.0%
1,3-Dichloropropane	< 1.0	UIP's	0.
2,2-Dichloropropane	< 1.0		



ENDYNE, INC.

Laboratory Services

160 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
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LABORATORY REPORT

SW 8260B

CLIENT: Ross Environ. Assoc., Inc.
PROJECT: Rice/26-047
SITE: Dup
DATE RECEIVED: June 23, 2006
REPORT DATE: July 7, 2006
ANALYSIS DATE: July 3, 2006

ORDER ID: 45966
REFERENCE NUMBER: 277047
DATE SAMPLED: June 21, 2006
TIME SAMPLED: NI
SAMPLER: NP/JG
ANALYST: 725

<u>Parameter</u>	<u>Result</u> <u>ug/L</u>	<u>Parameter</u>	<u>Result</u> <u>ug/L</u>
Acetone	< 10.0	1,1-Dichloropropene	< 1.0
Benzene	< 1.0	cis-1,3-Dichloropropene	< 1.0
Bromobenzene	< 1.0	trans-1,3-Dichloropropene	< 1.0
Bromochloromethane	< 2.0	Diethyl Ether	< 5.0
Bromodichloromethane	< 1.0	Ethylbenzene	< 1.0
Bromoform	< 2.0	Hexachlorobutadiene	< 2.0
Bromomethane	< 5.0	2-Hexanone	< 10.0
2-Butanone	< 10.0	Isopropylbenzene	< 1.0
n-Butylbenzene	< 1.0	p-Isopropyltoluene	< 1.0
sec-Butylbenzene	< 1.0	Methylene Chloride	< 5.0
tert-Butylbenzene	< 1.0	4-Methyl-2-Pentanone	< 10.0
Carbon Disulfide	< 5.0	MTBE	< 2.0
Carbon Tetrachloride	< 1.0	Naphthalene	< 2.0
Chlorobenzene	< 1.0	n-Propylbenzene	< 1.0
Chloroethane	< 5.0	Styrene	< 1.0
2-Chloroethyl Vinyl Ether	< 20.0	1,1,1,2-Tetrachloroethane	< 2.0
Chloroform	< 1.0	1,1,2,2-Tetrachloroethane	< 2.0
Chloromethane	< 3.0	Tetrachloroethene	< 1.0
4-Chlorotoluene	< 1.0	Tetrahydrofuran	< 10.0
2-Chlorotoluene	< 1.0	Toluene	< 1.0
Dibromochloromethane	< 2.0	1,2,3-Trichlorobenzene	< 2.0
1,2-Dibromo-3-Chloropropane	< 2.0	1,2,4-Trichlorobenzene	< 2.0
1,2-Dibromoethane	< 2.0	1,1,1-Trichloroethane	< 1.0
Dibromomethane	< 2.0	1,1,2-Trichloroethane	< 1.0
1,2-Dichlorobenzene	< 1.0	Trichloroethene	< 1.0
1,3-Dichlorobenzene	< 1.0	Trichlorofluoromethane	< 2.0
1,4-Dichlorobenzene	< 1.0	1,2,3-Trichloropropane	< 2.0
Dichlorodifluoromethane	< 5.0	1,2,4-Trimethylbenzene	< 1.0
1,1-Dichloroethane	< 1.0	1,3,5-Trimethylbenzene	< 1.0
1,2-Dichloroethane	< 1.0	Vinyl Chloride	< 2.0
1,1-Dichloroethene	< 1.0	Xylenes, Total	< 2.0
cis-1,2-Dichloroethene	< 1.0	Surrogate 1	98.0%
trans-1,2-Dichloroethene	< 1.0	Surrogate 2	100.0%
1,2-Dichloropropane	< 1.0	Surrogate 3	101.0%
1,3-Dichloropropane	< 1.0	UIP's	0.
2,2-Dichloropropane	< 1.0		



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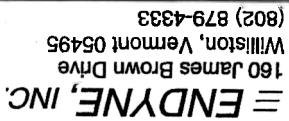
LABORATORY REPORT

SW 8260B

CLIENT: Ross Environ. Assoc., Inc
PROJECT: Rice/26-047
SITE: T.B.
DATE RECEIVED: June 23, 2006
REPORT DATE: July 7, 2006
ANALYSIS DATE: July 3, 2006

ORDER ID: 45966
REFERENCE NUMBER: 277048
DATE SAMPLED: June 21, 2006
TIME SAMPLED: 11:05 AM
SAMPLER: NP/JG
ANALYST: 725

<u>Parameter</u>	<u>Result</u> <u>ug/L</u>	<u>Parameter</u>	<u>Result</u> <u>ug/L</u>
Acetone	< 10.0	1,1-Dichloropropene	< 1.0
Benzene	< 1.0	cis-1,3-Dichloropropene	< 1.0
Bromobenzene	< 1.0	trans-1,3-Dichloropropene	< 1.0
Bromochloromethane	< 2.0	Diethyl Ether	< 5.0
Bromodichloromethane	< 1.0	Ethylbenzene	< 1.0
Bromoform	< 2.0	Hexachlorobutadiene	< 2.0
Bromomethane	< 5.0	2-Hexanone	< 10.0
2-Butanone	< 10.0	Isopropylbenzene	< 1.0
n-Butylbenzene	< 1.0	p-Isopropyltoluene	< 1.0
sec-Butylbenzene	< 1.0	Methylene Chloride	< 5.0
tert-Butylbenzene	< 1.0	4-Methyl-2-Pentanone	< 10.0
Carbon Disulfide	< 5.0	MTBE	< 2.0
Carbon Tetrachloride	< 1.0	Naphthalene	< 2.0
Chlorobenzene	< 1.0	n-Propylbenzene	< 1.0
Chloroethane	< 5.0	Styrene	< 1.0
2-Chloroethyl Vinyl Ether	< 20.0	1,1,1,2-Tetrachloroethane	< 2.0
Chloroform	< 1.0	1,1,2,2-Tetrachloroethane	< 2.0
Chloromethane	< 3.0	Tetrachloroethene	< 1.0
4-Chlorotoluene	< 1.0	Tetrahydrofuran	< 10.0
2-Chlorotoluene	< 1.0	Toluene	< 1.0
Dibromochloromethane	< 2.0	1,2,3-Trichlorobenzene	< 2.0
1,2-Dibromo-3-Chloropropane	< 2.0	1,2,4-Trichlorobenzene	< 2.0
1,2-Dibromoethane	< 2.0	1,1,1-Trichloroethane	< 1.0
Dibromomethane	< 2.0	1,1,2-Trichloroethane	< 1.0
1,2-Dichlorobenzene	< 1.0	Trichloroethene	< 1.0
1,3-Dichlorobenzene	< 1.0	Trichlorofluoromethane	< 2.0
1,4-Dichlorobenzene	< 1.0	1,2,3-Trichloropropane	< 2.0
Dichlorodifluoromethane	< 5.0	1,2,4-Trimethylbenzene	< 1.0
1,1-Dichloroethane	< 1.0	1,3,5-Trimethylbenzene	< 1.0
1,2-Dichloroethane	< 1.0	Vinyl Chloride	< 2.0
1,1-Dichloroethene	< 1.0	Xylenes, Total	< 2.0
cis-1,2-Dichloroethene	< 1.0	Surrogate 1	102.0
trans-1,2-Dichloroethene	< 1.0	Surrogate 2	100.0
1,2-Dichloropropane	< 1.0	Surrogate 3	102.0
1,3-Dichloropropane	< 1.0	UIP's	0.
2,2-Dichloropropane	< 1.0		



82040

Billing Address: REA

Reporting Address: 12E4

26-92

Project Name: RICE

Sampler Name: NP: TG

Phone #: Same

Company: **BEA**

0-2

Endyne Order ID: (Lab Use Only)

49687

S-

2
Contact Name/Phone #:

802 253-4280

Ref # (Lab Use Only)	Sample Identification	Matrix	GC BAR P M O C	Date/Time 6/21/06	Sample Containers No. Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
	MW-1	H ₂ O	X	11:30	4 40mL		23, 24	HCL	
	MW-2			11:50					
	MW-3			11:45					
	MW-4			11:15					
	DUP			11:05	1 ↑				
	T.B.				↑				

Relinquished by:

Date/Time

6/21/2014 14:35

14-00000

20/02/97 (M)

SHUT-OUT

103dA

RECEIVED BY:

by

Date/Time

282-9

LAB USE ONLY

Delivery:

205

Comment

34	Other										
32	TCRP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)	33									
31	Metals (As Is, Total, Diss.) Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Hg, K, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Ti, V, Zn										
5	Nitrate N	10	Alkalinity	15	Conductivity	20	8010/8020	25	8270 B/N or Acid	30	
4	Nitrite N	9	BOD	14	Turbidity	19	8021B	24	8260/8260B	29	
3	Ammonia-N	8	Total Diss. P	13	TDS	18	COD	23	8015 DRO	28	RCRA8 Metals
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	8015 GRO	27	PP13 Metals
1	pH	6	TKN	11	Total Solids	16	Sulfate	21	1664 TPH/FOG	26	8270 PAH

Requested Analyses

ON

New York State Project: Yes.